



287 Meeting Street, Charleston, SC 29401

## Highlights:

### *Agency milestones*

2006-2010 Strategic Plan on Web

2004-2006 Biennial Report Published

### *Humans and the coastal landscape*

New Web Portal for Coastal Officials

Web site Navigates Development Laws

Tidal Creek Habitats Booklet Published

### *Humans and the risks of coastal natural hazards*

Hurri-Quake® Nail Wins  
Popular Science Award

Rip Currents Awareness Program Gears Up

### *Coastal-dependent economy*

Shrimpers Going Green

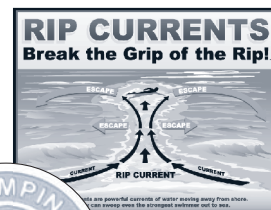
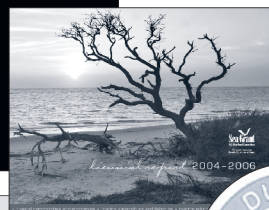
S.C. Shrimp Advertising Campaign Kicks Off

### *Scientific literacy and workforce development*

Five S.C. Students Selected for  
Knauss Fellowships

New Technology Helps Teach Science

### *Awards and staff news*



# Inside Sea Grant



Volume 10 Number 1 Summer 2008

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## Agency milestones

### 2006-2010 Strategic Plan Available on Web

The S.C. Sea Grant Consortium has identified a plan of action for the current four years to address critical coastal and marine resource issues facing South Carolina. These goals and objectives serve as a guide for the activities that the S.C. Sea Grant Consortium undertakes.

Consortium leadership and staff studied strategic-planning efforts of other Sea Grant programs and the National Oceanic and Atmospheric Administration (NOAA) to determine how best to restructure and receive input for writing the new plan. The Consortium used an online survey to request input from stakeholders on the strategic goals and objectives, as well as on the most pressing issues facing South Carolina. In addition, the survey offered respondents opportunities to provide the Consortium with additional priorities and where information was lacking for a given topic.

The Consortium also engaged its Program Advisory Board (PAB) for input on the priorities of the agency. The PAB is composed of 30 members representing a variety of stakeholders, including state and federal agencies, business and industry, community leaders, and the external scientific community.

As a result of the planning process, four programmatic areas have been identified by the Consortium:

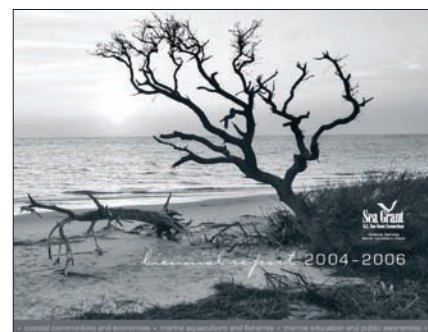
- (1) Humans and the Coastal Landscape,
- (2) Humans and the Risks of Coastal Natural Hazards,
- (3) Coastal-dependent Economy, and
- (4) Scientific Literacy and Workforce Development.

Priority areas

include the ecological and economic value of coastal and ocean ecosystems, effects of coastal growth and land-use change, natural hazards, sustainable economic development, conservation of natural and cultural resources, and scientific literacy, stewardship, and a scientifically trained workforce. The survey results and the strategic plan are available at [www.scseagrant.org/Content/?cid=250](http://www.scseagrant.org/Content/?cid=250).

### 2004-2006 S.C. Sea Grant Biennial Report Published

A report covering two years of Consortium-sponsored research, outreach, education, and communications projects is available.



The report describes efforts in the areas of coastal ocean processes, natural hazards, ecosystem dynamics, coastal growth and ecosystem effects, coastal communities and economies, marine aquaculture and fisheries, and education and public awareness.

To order a hard copy, visit [www.scseagrant.org/Content/?cid=155](http://www.scseagrant.org/Content/?cid=155) or call (843) 953-2078. A PDF can be downloaded from the Consortium's Web site.

*Inside Sea Grant* is published two times a year to inform interested constituents about goals, activities, and accomplishments of the S.C. Sea Grant Consortium.

S.C. Sea Grant Consortium is a university-based state agency that enhances the practical use and conservation of South Carolina's coastal and marine resources to foster a sustainable economy and environment.

**Editor**  
Susan Ferris Hill

**Contributing Writer**  
John H. Tibbetts

**Executive Director**  
M. Richard DeVoe

Direct correspondence to:  
*Inside Sea Grant* Editor  
S.C. Sea Grant Consortium  
287 Meeting Street  
Charleston, SC 29401  
Phone: (843) 953-2078  
Fax: (843) 953-2080  
Web: [www.scseagrant.org](http://www.scseagrant.org)

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A publication sponsored by the  
S.C. Sea Grant Consortium pursuant to  
National Oceanic and Atmospheric Administration  
Award No. NA06OAR4170015.



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*Inside Sea Grant* is printed on recycled paper using soy-based ink.

### New Web Portal for Coastal Officials Launched

The S.C. Coastal Information Network launched a new Web portal, [www.sccoastalinfo.org](http://www.sccoastalinfo.org). The user-friendly Web site is a one-stop information resource for workshops, presentations, and specialized training opportunities available to coastal decision-makers, community planners, and local officials. The calendar-based portal allows users to search for events by date, topic, location, and target audience. The Web site also lists community events in coastal South Carolina and has downloadable resources, such as manuals, guidebooks and technical reports, which can be searched by keyword or category. Categories of topics include beach management, resource conservation, climate change, and coastal development.

The S.C. Coastal Information Network was initiated in 2006 by the S.C. Sea Grant Consortium to enhance coordination of coastal community public outreach efforts in South Carolina. Network partners include outreach personnel from the S.C. Sea Grant Consortium, S.C. Department of Health and Environmental Control (SCDHEC) – SCDHEC Office of Ocean and Coastal Resource Management and SCDHEC Bureau of Water, S.C. Department of Natural Resources – ACE Basin National Estuarine Research Reserve and North Inlet-Winyah Bay National Estuarine Research Reserve, Clemson University Cooperative Extension Service, Berkeley-Charleston-Dorchester Council of Governments, Waccamaw Regional Council of Governments, Urban Land Institute of South Carolina, S.C. Department of Archives and History, and the National Oceanic and Atmospheric Administration (NOAA) – NOAA Coastal Services Center and NOAA Hollings Marine Laboratory. Contact April Turner, coastal community specialist, at (843) 953-2078 or [april.turner@scseagrant.org](mailto:april.turner@scseagrant.org) to become a partner or for more information about the portal.

### S.C. Sea Grant Researchers Help Improve GA Stormwater Policies

Coastal resource managers and scientists from Georgia and South Carolina recently

met in Charleston, S.C. to discuss the impacts of coastal development on aquatic resources. A Coastal Stormwater Supplement for the Georgia Stormwater Management Manual is currently being developed by the Center for Watershed Protection. Drawing upon research performed in South Carolina, the Georgia contingent is improving the manual, which will be used as justification for more stringent laws during the 2008 Georgia legislative session, requiring municipalities to adhere to guidance in the manual.

Presentations and group discussions focused attention on several NOAA-sponsored projects administered by the S.C. Sea Grant Consortium, including the Land Use – Coastal Ecosystem Study (LU-CES) and Low Impact Development (LID) research currently underway in an infill development in North Charleston, S.C. The LU-CES project was undertaken to improve the knowledge base about population and socioeconomic trends that characterize coastal ecosystems in the Southeast, and how these trends affect coastal ecosystems. The LID research focuses on the efficiency and effectiveness of innovative stormwater management practices for coastal residential development projects.

### Regulatory Pathfinder Navigates Coastal Development Laws

Kim Diana Connolly, professor at the University of South Carolina School of Law, and two graduate students recently developed a comprehensive Web site, now in beta form, to assist individuals, business owners, and municipal officials sort through the many state and federal laws that govern coastal development. Divided into sections by audience, the Web site provides brief descriptions of laws with links to the governing agency, project-specific links for construction projects such as building a dock, definitions of relevant terms, links to permitting resources, and contact information for state and federal regulators. The Regulatory Pathfinder was created with support from the S.C. Sea Grant Consortium. To learn more, visit [www.law.sc.edu/pathfinder/coastal\\_development](http://www.law.sc.edu/pathfinder/coastal_development).



# Awards and staff news

**Coastal Heritage**, a quarterly publication of the S.C. Sea Grant Consortium, recently won two prestigious awards from the Society for Technical Communication (STC) for 2007-2008: A Distinguished award from the Carolina Chapter and a Distinguished award in the International competition. According to the STC judges, "The magazine is very effective, well-organized, and



visually appealing. It applies the principles of technical communication in a superior way, particularly in how it anticipates and fulfills the needs of

the audience." The rigorous judging process was based on content and organization, copy editing, visual design, and creativity. *Coastal Heritage* was on display at the 2008 Technical Communications Summit in Philadelphia, PA, in June.

An educational insert in *The Post and Courier* on marine debris, "**Turning the Tide on Trash**," recently won 1st place in the category Non-traditional Special Section with an Emphasis on Creativity of the Mid-Atlantic Newspaper Advertising Marketing Executives annual competition. In fall 2007, the Center for Ocean Sciences Education Excellence—Southeast, S.C. Sea Grant Consortium, Post and Courier Foundation, and other agencies created a special section on marine debris, which was distributed to over 200,000 newspaper subscribers and teachers participating in the Newspapers in Education program.

The **Carolinas Beach Vitex Task Force** won the 2007 Community Spirit Award from the National Fish and Wildlife Foundation. Betsy Brabson, coordinator for South Carolina, accepted the award on behalf of the task force during National Weed Awareness Week at a reception in Washington, D.C. Brabson works closely with Jack Whetstone, Sea Grant marine

aquaculture specialist, who is a founding member of the task force and lead specialist for the South Carolina eradication program, which began in late 2006.

**Rick DeVoe**, executive director, was elected to serve on The Coastal Society Board of Directors for a three-year term, which began in January 2008. The Coastal Society works to address emerging coastal issues through partnership development and promotion of communication and education. DeVoe also was selected for the Urban Land Institute (ULI) Leadership Development Initiative. ULI seeks to promote responsible land use and sustainable communities worldwide.

In addition, as chair of the Sea Grant Association's External Relations Committee, DeVoe was invited to testify in April before two subcommittees of the U.S. House of Representatives. The first hearing was before the Committee on Appropriations, Subcommittee on Commerce, Justice, and Science. DeVoe was one of about 30 individuals to offer five minute oral statements for the record, and he spoke about the funding needs of NOAA and the National Sea Grant College Program.

The next day, he and a panel of witnesses testified before the Committee on Natural Resources, Subcommittee on Natural Resources, Fisheries, Wildlife, and Oceans about H.R. 5618, the National Sea Grant College Program Amendments Act of 2008, which is the Sea Grant reauthorization bill. DeVoe discussed the rationale for providing authorization levels above and beyond what is in the current statute, and provided an example of Sea Grant's innovativeness: the Hurri-Quake® nail.

In May, DeVoe was called back to testify before the U.S. House of Representatives Committee on Science and Technology, Subcommittee on Energy and Environment in support of H.R. 5618, from the perspective of the S.C. Sea Grant Consortium.

**Elaine Knight**, assistant director, has been selected by the S.C. Budget and Control Board to serve a second term on the State Employee Grievance Committee. Her appointment is for three years, beginning in July 2008.

**Denise Sanger**, assistant director for research and planning, was elected President-Elect of the Southeastern Estuarine Research Society (SEERS), a two-year appointment starting in March 2008. She will become president of the society during 2010-2012. As President-Elect, Sanger's duties include presiding at all meetings of the Board of Directors, acting as the chief executive officer of the corporation, and appointing standing committee members.

**John Dwyer**, assistant to the director for program management, was appointed to the SEERS Board of Directors, serving as a member-at-large. Dwyer's appointment is from 2008-2010.

**Robert Bacon**, extension program leader, was elected as a member of the Clemson Extension Senate for 2008. The Extension Senate represents the faculty of Cooperative Extension Service in its relationship with the university and extension administration, and recommends new policies or changes in existing policies that affect extension employees, their welfare, and other matters as necessary to promote the best interest of the University.

**Lundie Spence**, director of the Center for Ocean Sciences Education Excellence-Southeast (COSEE-SE), has been elected chair-elect for the National COSEE Council. The Council is the governing body that provides coordination among the 12 COSEE centers located throughout the U.S. Spence, who will serve as chair for 2009-2010, will work with the COSEE Council, Network, National Advisory Committee, National Science Foundation, and Central Coordinating Office to arrange meetings, facilitate progress, and communicate information about COSEE activities.

# Humans and the risks of coastal natural hazards

## Hurri-Quake® Nail Wins “Innovation of the Year” Award from *Popular Science*

With S.C. Sea Grant support, Ed Sutt, a former graduate student at Clemson University’s Wind Load Test Facility, examined better ways to secure residential home structures under threat from hurricanes and earthquakes. He



discovered that house failures often start with a broken window and then high winds inflate the house, causing the roof to lift from its frame.

Sutt, who is now employed by Stanley Works, invented a nail made of carbon-steel alloy that has a wider head than other nails, a twist below the nail head to fill the space created by rings, and deep rings that hold the shaft firmly in the frame. The new nail was subjected to hurricane-force winds during testing and held at 20,000 pounds. In comparison, at 9,000 pounds regular nails begin to pull out of the framework. Sutt’s invention, known as the Hurri-Quake® nail, won the 2006 “Innovation of the Year” Award from the national magazine, *Popular Science*.

## Climate Display at State Park Educates Visitors

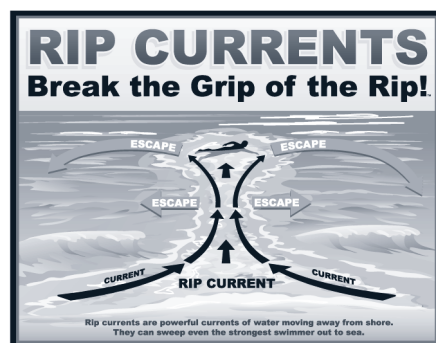
The S.C. Sea Grant Extension Program created a new display for the Myrtle Beach State Park Nature Center that highlights three aspects about the earth’s climate system. The first poster presents the different parts of the climate system and mechanisms behind climate change, in time scales from years to decades and from thousands to millions of years. The poster also points out the difference

between weather and climate. The impacts of climatic change are identified in the second poster, with an emphasis on possible impacts that may occur in the Myrtle Beach region, such as sea-level rise, saltwater intrusion, and more intense tropical storms. The third poster shows the records of both temperature and precipitation for Georgetown and Conway from 1895 to the present, prompting viewers to describe the trends for these two stations and determine if it’s getting warmer or colder and wetter or drier in the Myrtle Beach area.

According to Ann Malys Wilson, interpretive ranger at the park, nearly 25,500 people each year will learn more about climate through the display. She also plans to incorporate information from the display into a public program, “Planet Jeopardy,” as well as a school program, “Coastal Dynamics,” for fifth graders. The posters will be used in a number of new programs at the park throughout the year.

## Rip Currents Awareness Program Gears Up in S.C.

A rip currents awareness program in Georgetown and Horry counties was initiated in 2007 and continues into 2008. Rip currents are fast-moving currents that flow away from the shore, often catching beachgoers by surprise.



The South Carolina effort was kicked off with a Rip Currents Awareness Workshop at Coastal Carolina University that was attended by over 50 people, representing organizations involved with public safety, fire departments, lifeguards, the Coast Guard, power squadrons, and the National Weather Service. The workshop focused on the driving forces of rip currents, forecasting, awareness, and effective methods to reach target audiences.

As a result of the workshop, a core group developed a rip currents outreach strategy to include “Break the Grip of the Rip®” signs, magnets, brochures, public service announcements (PSAs), and presentations to various beach user groups. The PSAs aired over 500 times on WPDE Ch. 15, which broadcasts in both Horry and Georgetown counties, have run on the local government channel for Horry County, and were distributed to two state parks, the Grand Strand Visitors Centers, and local hotels. This summer, in cooperation with local municipalities, McCoy will be placing 100 rip current signs at beach access points from North Myrtle Beach to Folly Beach to educate beachgoers on how to escape if they are caught in a rip current.

National partners for the rip current awareness campaign are NOAA National Weather Service, NOAA National Sea Grant College Program, National Park Service, and United States Lifesaving Association. For more information about efforts in South Carolina, contact Clay McCoy, coastal processes specialist, at (843) 349-4012 or [cmccoy@coastal.edu](mailto:cmccoy@coastal.edu). Visit [www.ripcurrents.noaa.gov](http://www.ripcurrents.noaa.gov) for safety tips, forecasts for several cities including Charleston, S.C., a Q&A section, and the science behind why rip currents occur.

## The Weather Channel “Crumbling Coasts” Series Featured Coastal Erosion Study Scientists

The Weather Channel series, “*Crumbling Coasts*,” aired in November 2007 and featured interviews with Rick DeVoe and several scientists who were part of the five-year Coastal Erosion Study sponsored by the U.S. Geological Survey (USGS) and the S.C. Sea Grant Consortium. The series covered the impacts of erosion from the Outer Banks to Florida, and highlighted two erosion hotspots in South Carolina, DeBordieu and Isle of Palms. The Weather Channel producers selected the Coastal Erosion Study participants because of their scientific expertise in coastal processes, shoreline change, and information transfer to coastal decision makers. Scientists interviewed included Paul Gayes, director of CCU’s Center for Marine and Wetland Studies, Chris Mack, coastal engineer formerly with the U.S. Army Corps of Engineers, and John Warner, civil engineer for USGS.

# Coastal-dependent economy

## Shrimpers Going Green

The S.C. Sea Grant Extension Program recently hosted a workshop, "Biodiesel—Going Green," in conjunction with Wild American Shrimp, Inc. and Southeast Biodiesel at the Maritime Center in Charleston.



Wayne Magwood pulls up to the dock in his shrimp boat, *Winds of Fortune*, which is fueled by biodiesel. Photo: Susan Ferris Hill

Over 30 shrimpers from South Carolina, North Carolina, and Georgia learned about this newly available alternative fuel, currently made from poultry fat, that is biodegradable, non-flammable, non-carcinogenic, and produces cleaner emissions, providing numerous benefits to human health and air and water quality. Using biodiesel also extends the life of an engine because the fuel is burned more completely and cleanly, which reduces the amount of residue in the fuel line system and leads to fewer repairs. Using biodiesel could help shrimpers become more competitive in an industry that is dominated by imports.

During the workshop, specialists from Southeast Biodiesel described the differences between diesel and biodiesel, basic chemistry behind producing biodiesel, the different blends available, benefits of making the switch, and production, supply, and delivery logistics. Following a Q&A session, participants traveled to the production plant in North Charleston for an in-depth tour to observe how the fuel is made. Biodiesel use by South Carolina shrimpers is on the rise: Wayne Magwood, a shrimper based in Mt. Pleasant, S.C., uses the fuel in his boat,

Winds of Fortune, and local seafood distributors, including Cherry Point Seafood and East Coast Seafood on Wadmalaw Island, provide the biodiesel for refueling boats.

For more information, contact Amber Von Harten, fisheries specialist, at (843) 470-3655 ext. 112 or [ambervh@clemson.edu](mailto:ambervh@clemson.edu).

## Advertising Campaign for S.C. Shrimp Kicks Off in Summer 2008

The S.C. Sea Grant Extension Program assisted with planning an outdoor advertising campaign to promote local South Carolina shrimp. The ads were developed in partnership with the S.C. Shrimpers Association, Wild American Shrimp, Inc., and the S.C. Department of Agriculture (SCDA). The billboards will promote the freshness and flavor of local shrimp, and will coordinate with the SCDA's current "Certified S.C. Grown" and "Fresh on the Menu" campaigns, which

**South Carolina Ocean Caught Shrimp**

**Why choose to eat South Carolina ocean caught shrimp?**

**BEST CHOICE:**  
The South Carolina Shrimper's Association wants you the consumer to always have a choice and be able to get some of the best shrimp in the world. Said to say that often when you eat out you are consuming a foreign pond raised shrimp. Even though the lack of flavor can be covered up with sauces and batter, other possible concerns may still be present. To be informed use the Internet. One can start by going to any search engine and typing in the keyword of **ocean caught shrimp**.

**HEALTH:**  
South Carolina ocean caught shrimp are a great nutritional value. They are low carb, low fat, low calorie and a good source of protein. Ocean caught South Carolina shrimp contain heart healthy omega 3 fatty acids. A Rockefeller University study showed that the ratio of HDL to LDL was favorable for steamed shrimp. Ocean caught shrimp are also a source of selenium, Vitamins (B6, D, B12), Niacin, Iron, Magnesium, Potassium and Calcium.

**ECONOMICAL VALUE:**  
A product this tasty and good for you would be great to eat anytime. There are many ways to prepare shrimp. Eat it whole pound by yourself, stretch the pound to feed your family, or be a hit using only a pound and feed guest with many of the delicious recipes available. When shrimp are put in a recipe they can be a real economic value. How many can be fed with a pound of steak or other main course meat?

Freeze the shrimp in water when fresh and they will defrost tasting the same weeks and months later. Don't wait months. **Eat 'em Up** and enjoy fresh South Carolina Ocean Caught Shrimp all of the time.

To find out where in your area you can buy fresh ocean caught shrimp, contact the South Carolina Shrimper's Association or view our web site's [Purveyors & Restaurants](#) page.

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encourage consumers and restaurants to buy locally grown and produced food. The bill-boards will be located in the Beaufort/Hilton Head, Charleston, and Grand Strand regions from May through August. To find out where to purchase local shrimp, visit [www.scshrimpmkt.com](http://www.scshrimpmkt.com). Contact Amber Von Harten at (843) 470-3655 ext. 112 or [ambervh@clemson.edu](mailto:ambervh@clemson.edu) for more details about the campaign.

## MarketMaker Web Portal to be Launched, S.C. Shrimp Industry On Board

MarketMaker, an interactive web-based tool and mapping system developed by the University of Illinois, will contain information about the S.C. shrimp industry in the summer of 2008. The Web portal identifies businesses and markets of agricultural products in participating states, providing an important link between producers and consumers. The portal is being



expanded with the help of the National Oceanic and Atmospheric Administration, S.C. Sea Grant Extension Program, and Clemson University to feature a searchable database connecting consumers that seek local South Carolina products with suppliers. A training session for shrimpers was recently held and a small working group is gathering business information about shrimp producers, processors, wholesalers, and distributors to be posted on the Web site. To learn more about MarketMaker, visit [national.marketmaker.uiuc.edu](http://national.marketmaker.uiuc.edu) or contact Amber Von Harten at (843) 470-3655 ext. 112 or [ambervh@clemson.edu](mailto:ambervh@clemson.edu).



# Scientific literacy and workforce development

## Five South Carolina Students Selected for Knauss Fellowships

Five South Carolina graduate students are serving as Dean John A. Knauss Marine Policy Fellows for 2008. This number of Knauss fellows is a record for South Carolina colleges and universities since the fellowship program began in 1979.

**Courtney Arthur** is completing a M.S. degree in marine biology at the College of Charleston (CofC) and is working in the NOAA National Ocean Service (NOS) Office of Response and Restoration as a research analyst for the Marine Debris Program. In this capacity, Arthur is coordinating a research workshop slated for September, participating as a member of a grants review panel, organizing marine debris literature, and developing a database for derelict fishing gear.

**Jessica Berrio** earned a M.S. in environmental studies at CofC. Berrio is serving as a fellow in the NOAA NOS Office of Ocean and Coastal Resource Management National Policy and Evaluation Division. She is developing a report, "A Strategy for Providing Guidance on Climate Change Adaptation," as well as a climate change Web portal for the Pacific Islands.

**Luis Frazão da Silva Leandro** is completing a M.S. in marine biology from CofC and he is working in the NOAA Office of Legislative Affairs. Leandro is preparing NOAA staff for hearings and briefings on ocean and coastal legislation and serves as a conduit of information between the agency and the U.S. Congress.

**Amanda McCarty** is completing a M.S. in marine biology at CofC. She is serving her fellowship working for the Senate Commerce Committee's Subcommittee on Oceans, Atmosphere, Fisheries, and Coast Guard. McCarty is planning hearings, drafting and modifying legislation, and providing Senators with information about ocean, coastal, and climate issues and legislation.

**Emily McDonald** earned a M.S. in environmental health sciences at the University of South Carolina. McDonald is working in the NOAA Office of Ocean Exploration and Research as part of the

planning team for the new NOAA ship, *Okeanos Explorer*, which is the first ship dedicated to the systematic exploration of oceans. She is also planning for and managing field operations for the 2008 season, and is the data manager for expeditions and coordinator of the Web site [www.oceanexplorer.noaa.gov](http://www.oceanexplorer.noaa.gov).

To further the education of tomorrow's ocean policy leaders, the NOAA National Sea Grant College Program sponsors the John A. Knauss Marine Policy Fellowship Program, bringing a select group of graduate students to the nation's capital where they work in the federal government's legislative and executive branches. The students learn about federal policy regarding marine and Great Lakes natural resources and lend their scientific expertise to federal agencies and congressional staff offices. For more information about the Knauss Marine Policy Fellowship program, visit [www.scseagrant.org/Content/?cid=56](http://www.scseagrant.org/Content/?cid=56).

## ROVs Used as Tool to Teach Science and Engineering

In March, Elizabeth Vernon, marine educator for the S.C. Sea Grant Consortium and the Center for Ocean Sciences Education Excellence—Southeast (COSEE-SE), coordinated a workshop on how to build a remotely operated vehicle, or ROV. Gray's Reef National Marine Sanctuary staff provided instruction to over 20 formal and informal educators from North Carolina, South Carolina, and Georgia. Participants



Workshop participants learn how to build their own remotely operated vehicle (ROV).  
Photo: Susan Ferris Hill

built their own ROV from PVC pipe and other materials and tested their design by "flying" it in a pool. They also learned how ROV technology can be incorporated into a high school curriculum and tied to

state and national science standards, as well as how ROVs are being used for research, monitoring, and exploration.

Educators are using their ROVs to teach marine science, chemistry, physics, and engineering concepts in the classroom. Margaret Spigner, a science teacher at West Ashley High School, mounted an underwater camera onto the ROV so that students could learn about the effectiveness of turtle excluder devices on crab pots. Sarah Piwinski, education director for the tall ship, *Spirit of South Carolina*, will use the ROV she built on expedition cruises this summer. And three middle- and high-school teams entered their ROVs in the Southeast Regional ROV MATE Competition organized by NOAA Gray's Reef National Marine Sanctuary and the Marine Advanced Technology Education Center; one of the teams won second place. MIT Sea Grant originally developed the ROV design and instructions. For more information about this and other Sea Grant education programs, contact Elizabeth Vernon at (843) 953-2078 or [elizabeth.vernon@scseagrant.org](mailto:elizabeth.vernon@scseagrant.org).

## S.C. Teachers and Students Learn about Ocean Science

South Carolina Ocean Awareness Days were recently conducted at the South Carolina State Museum (Columbia, S.C.), Coastal Carolina University (Conway, S.C.), South Carolina Aquarium (Charleston, S.C.), and the Coastal Discovery Museum (Hilton Head, S.C.), bringing ocean science concepts to over 50 educators. The Ocean Awareness Days were coordinated with formal and informal education institutions by a teacher who had previously participated in a COSEE-SE Leadership Institute. This education program, available to teachers and informal educators in North Carolina, South Carolina, and Georgia, is designed to encourage partnerships and foster opportunities for coordinating teachers to relay ocean science information to other teachers in their state. Over 20 informal education centers in the tri-state region have hosted Ocean Awareness Days since 2003. For more information, contact Margaret Olsen, University of Georgia education specialist, at (912) 230-1149 or [olsen@uga.edu](mailto:olsen@uga.edu).

## Beaufort County Storm Drains Marked

Thanks to a S.C. Coastal Community Initiative grant from the S.C. Sea Grant Consortium, more than 1,000 storm drains in Beaufort County now have markers. The markers instruct residents and visitors not to dump waste materials into the drains so



that impacts to coastal waters and ecosystems are minimized. This project is an element of Beaufort County's campaign for pollution source control and stormwater management. Beaufort County Public Works partnered with volunteers from the Friends of the Rivers to identify and mark the storm drains. The location of each storm drain is also being documented with a Global Positioning System to update the county's infrastructure mapping. The infrastructure can then be inspected for potential illicit discharge investigation, repair, and maintenance. This project enhances public awareness about nonpoint source pollution and the need to protect the County's invaluable local natural resources.

The S.C. Coastal Community Initiative is a competitive small grants program that provides incentives for local governments to develop and implement "quality growth" land-management policies and practices. To date, seven coastal communities have received these grants, which range from \$2500 to \$5000, to address a variety of issues related to open space preservation, natural resource-based planning, water quality management, alternative transportation, sustainable community planning and design, and zoning ordinances and regulations. Participating communities have leveraged more than \$60,000 since the grant program began in 2003. For more details about the Coastal Community Initiative program, contact April Turner, coastal community specialist, at (843) 953-2078 or [april.turner@scseagrant.org](mailto:april.turner@scseagrant.org).

## Nonpoint Source Pollution Brochure Available

The S.C. Sea Grant Extension Program developed an informational brochure about nonpoint source pollution in cooperation with scientists of a Sea Grant-sponsored

stormwater best management practices research project. The research is focused in Oak Terrace Preserve, a sustainable residential development in North Charleston being constructed by the Noisette Company.

The brochure defines nonpoint source pollution (NPS), describes ways that communities can minimize NPS, and gives specific tips for individuals and homeowners about what they can do to reduce the amount of pollutants released into the environment. The brochure is part of a Stormwater Series that will be delivered



to new homeowners in Oak Terrace Preserve, distributed during open house events, and given to citizens who live nearby. Future installments of the series will include brochures on bioswales, rain gardens, pervious pavements, native plants, and other techniques to lessen human impacts on coastal resources. To receive

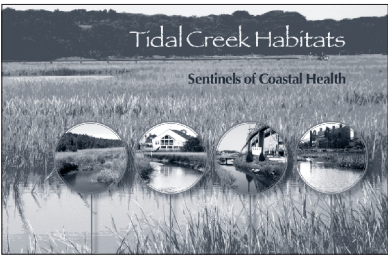
the NPS brochure, call the Consortium at (843) 953-2078 or order online at [www.scseagrant.org/Content/?cid=42](http://www.scseagrant.org/Content/?cid=42).

## SCETV Airs Program Focused on Coastal Growth and Ecosystem Effects

"Tide of Change," a one-hour documentary produced by Clemson University, was broadcast on March 27 on South Carolina Educational Television (SCETV), a PBS affiliate. The documentary featured interviews with research, regulatory, infrastructure, political, and environmental leaders from around the state who commented about the rapid population growth on the coast and its effects on the environment, human health, the ability to respond to natural disasters, and quality-of-life. Interviewees included Rick DeVoe, executive director of the Consortium, Margaret Davidson, director of the NOAA Coastal Services Center, Fred Holland, director of the Hollings Marine Laboratory (HML), Paul Sandifer, a senior scientist with HML, Robert Becker, director of Clemson's Strom Thurmond Institute, Jeff Allen, director of Clemson's Water Resources Center, Carolyn Boltin, deputy commissioner for SCDHEC-OCRM, and others. SCETV reaches viewers throughout the state of South Carolina, as well as parts of Georgia and North Carolina.

## Tidal Creek Habitats Booklet Published

*Tidal Creek Habitats: Sentinels of Coastal Health* explores tidal creek ecosystems and the various threats to the valuable ecological services they provide. The booklet, based in large part on over 15 years



of research by scientists Fred Holland, director of the NOAA Hollings Marine Laboratory, and Denise Sanger, assistant director for research and planning at the Consortium, includes recommendations for protecting these habitats, provides additional resources for more information, and contains a helpful glossary of terms. *Tidal Creek Habitats* was produced with support from the NOAA Hollings Marine Laboratory and the S.C. Sea Grant Consortium as part of the NOAA Oceans and Human Health Initiative. To order, call (843) 953-2078 or visit the Products section of the Consortium's Web site at [www.scseagrant.org/content/?cid=156](http://www.scseagrant.org/content/?cid=156).

## S.C. Coastal Impoundments Report Available

A State of Knowledge report, *South Carolina Coastal Wetland Impoundments*, written by Daniel Tufford at the University of South Carolina, includes a research summary from the mid-1980s to present, prior research and



policy recommendations, a summary of active research and new recommendations, and a comprehensive cited reference list. Impoundments in coastal South Carolina and Georgia are described, along with the associated flora and fauna. Support for this report was provided to the S.C. Sea Grant Consortium through a grant from the SCDHEC Office of Ocean and Coastal Resource Management. To order the report or download a PDF, visit [www.scseagrant.org/Content/?cid=327](http://www.scseagrant.org/Content/?cid=327) or call (843) 953-2078.